

Title (en)
METHOD FOR PREPARING HYDROPHOBIC SILICA AEROGEL AND HYDROPHOBIC SILICA AEROGEL PREPARED THEREFROM

Title (de)
VERFAHREN ZUR HERSTELLUNG EINES HYDROPHOBEN SILICIUMDIOXIDAEROGELS UND DADURCH HERGESTELLTES HYDROPHOBES SILICIUMDIOXIDAEROGEL

Title (fr)
PROCÉDÉ DE PRÉPARATION D'UN AÉROGEL DE SILICE HYDROPHOBE ET AÉROGEL DE SILICE HYDROPHOBE PRÉPARÉ À PARTIR DE CELUI-CI

Publication
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Application
EP 16867379 A 20161104

Priority

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Abstract (en)
[origin: EP3214041A1] The present invention relates to a method of preparing a high hydrophobic silica aerogel having a high specific surface area and a low tap density, and a hydrophobic silica aerogel prepared thereby. The method of preparing a hydrophobic silica aerogel according to the present invention may have good productivity and economic efficiency, because preparation time is reduced by simultaneously performing surface modification, gelation, and solvent substitution in a single step, and may control a degree of hydrophobicity of the prepared silica aerogel by controlling a surface modification reaction by including a step of adding ammonium hydroxide. Thus, the preparation method according to the present invention and the hydrophobic silica aerogel are suitable for industries that need the method and the hydrophobic silica aerogel, particularly, industries that need a silica aerogel having high hydrophobicity or industries that need a silica aerogel having various degrees of hydrophobicity.

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Citation (search report)

- [X] EP 2927194 A1 20151007 - LG CHEMICAL LTD [KR]
- [I] KR 20150093062 A 20150817 - LG CHEMICAL LTD [KR]
- [I] KR 20150093063 A 20150817 - LG CHEMICAL LTD [KR]
- [I] BHAGAT ET AL: "A cost-effective and fast synthesis of nanoporous SiO₂ aerogel powders using water-glass via ambient pressure drying route", SOLID STATE SCIENCES, ELSEVIER, PARIS, FR, vol. 9, no. 7, 6 August 2007 (2007-08-06), pages 628 - 635, XP022188002, ISSN: 1293-2558, DOI: 10.1016/J.SOLIDSTATESCIENCES.2007.04.020
- [I] BHAGAT S D ET AL: "Superhydrophobic silica aerogel powders with simultaneous surface modification, solvent exchange and sodium ion removal from hydrogels", MICROPOROUS AND MESOPOROUS MATERIALS, ELSEVIER, AMSTERDAM, NL, vol. 112, no. 1-3, 1 July 2008 (2008-07-01), pages 504 - 509, XP022665108, ISSN: 1387-1811, [retrieved on 20071030], DOI: 10.1016/J.MICROMESO.2007.10.030
- [A] LEE C J ET AL: "Synthesis of silica aerogels from waterglass via new modified ambient drying", JOURNAL OF MATERIALS SCIENCE, KLUWER ACADEMIC PUBLISHERS, BO, vol. 37, no. 11, 1 June 2002 (2002-06-01), pages 2237 - 2241, XP019209551, ISSN: 1573-4803, DOI: 10.1023/A:1015309014546
- [A] PARVATHY RAO A ET AL: "Effect of protic solvents on the physical properties of the ambient pressure dried hydrophobic silica aerogels using sodium silicate precursor", JOURNAL OF POROUS MATERIALS, KLUWER ACADEMIC PUBLISHERS, BO, vol. 15, no. 5, 14 June 2007 (2007-06-14), pages 507 - 512, XP019609405, ISSN: 1573-4854
- See references of WO 2017090911A1

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